

Fundamental microbiological working methods

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Principle

In order to prevent nutrient media and cultures from being contaminated with microorganisms that adhere to the working equipment, the equipment, nutrient media, and nutrient solutions must be sterilised. Petri dishes filled with a solidified nutrient medium are called plates in the specialised language of microbiologists. The nutrient medium is poured into the dishes either from test tubes, with one test tube holding the required quantity of ready-made medium for one Petri dish, or from Erlenmeyer flasks if a large number of plates needs to be prepared at the same time.

Benefits

- Experiment covers the basics of microbiology technics
- Experiment is the first in a series of complementary microbiology experiments
- Equipment of this experiment can also be used to perform the more advanced experiments

Tasks

1. Sterilisation of equipment
2. Preparation of standard nutrient agar for bacteria
3. Preparation of standard nutrient agar for moulds and yeasts
4. Preparation of a standard nutrient solution for bacteria
5. Preparation of slant agar tubes
6. Inoculation of microorganisms

Learning objectives

- Basics of microbiological work techniques
- Disinfection
- Nutrient agar
- Sterility
- Sterilisation
- Moulds
- Yeast
- Bacteria
- Inoculation

Scope of delivery

Beakers, Boro, high form, various sizes	46029-00	1
Graduated cylinders, Boro, various sizes	36629-00	1
Tripod,ring d=140 mm, h=240 mm	33302-00	1
Microscopic slides, 50 pcs	64691-00	1
Graduated pipettes, various sizes	36600-00	2
Test tube rack, wood, for 6 tubes d= 22mm	MAU-20042200	1
Erlenmeyer flasks, Duran®, narrow neck, various sizes	36121-00	2
Test tube, laboratory glass, various lengths	37656-10	1
Meat extract 10 g	31521-03	1
Peptone,dry,from meat 50 g	31708-05	1
Sterile stoppers f. id 15mm, 250	39266-00	1
Sterile stoppers f. id 29mm, 100	39267-00	1
Pipettor	36592-00	1
Spatula, double blade, 150 mm	33460-00	1
Glass rod,boro 3.3,l=300mm, d=7mm	40485-05	1
Wire gauze with ceramic, 160 x 160 mm	33287-01	1
pH test sticks 4.5-10, 100 sticks	30301-04	1
Bunsen burner, natural gas,w.cock	32167-05	1
Safety gas tubing, DVGW, sold by metre	39281-10	1
Sodium hydroxide, pellets, 500 g	30157-50	1
Water, distilled 5 l	31246-81	1
Agar-agar, powdered 100 g	31083-10	1
Autoclave with insert	04431-93	1
Watch glass, dia.60 mm	34570-00	1
Hydrochloric acid,approx.5% 250 ml	30315-25	1
Tweezers, l = 130 mm, straight, blunt	64610-00	1
Universal oven, 32 liters, 230 V	49559-93	1
Ethyl alcohol, absolute 500 ml	30008-50	1

Petri dishes, glass, various diameters	64705-00	1
pH test sticks 4.0-7.0,100 sticks	30301-03	1
Heating + cooking hotplate,230V	04025-93	1
Inoculating loops, 2 pieces	KLA-375-102	1
